

EGS CONFIDENCE TEST EXECUTION COVER SHEET

1. Test ID and Title: EOC5 - Resource Management Confidence Test
2. Test Conductor / Test Lead Rob Messerly
3. Planned Execution Date: Dec 2 - Dec 4, 1996 (Dry Run)
4. Actual Execution Date: _____
5. Planned Configuration:
EOC Hardware
 - Real-Time Server
 - Data Server
 - Data Storage Unit
 - Command Activity Controller workstation
 - Operations Controller workstation
 - Ground Controller workstation
 - Spacecraft Evaluator workstation
 - Instrument Evaluator workstation
ETS MPS
FOS Subsystems Release A
 - DMS
 - FUI
 - RMS
 - TLM
 - CMD
 - RCM
6. "As Run" Configuration:
7. Package items planned for execution:
 - Test Case EOC5.1 steps: TBD
 - Test Case EOC5.2 steps: TBD
 - Test Case EOC5.3 steps: TBD
 - Test Case EOC5.4 steps: TBD
8. Package items actually executed and deviations from currently published procedures.
9. Results
 - a. Capabilities successfully demonstrated
 - b. Capabilities not successfully demonstrated
 - c. Requirements verified
 - d. Discrepancy Reports submitted
10. Lessons Learned

RESOURCE MANAGEMENT CONFIDENCE TEST - EOC5

The capability to manage and monitor the configuration of the EOC includes configuring the EOC resources for multi-mission support, facilitating operational failure recovery during real-time contacts, and managing the real-time interface with the NCC. The logical strings are controlled for telemetry monitoring and command- i.e., they enable FOS users to receive and monitor telemetry from one or more spacecraft and one or more instruments. In addition, requests from a Command Activity Controller for command authority and a Ground Controller for Ground Control authority are received. The privilege is granted to authenticated users, and ensures that only one person has command authority for a single spacecraft at any one time.

Test Objectives:

The Resource Management Confidence Test will:

- demonstrate the ability to shift displays between various rooms and pages
- verify the ability to assign key functions such as command activity controller and ground controller to various workstations
- verify the ability to protect privileged operations, such as commanding
- configure and de-configure logical processing strings
- demonstrate the ability to failover to redundant or standby elements.

Test Configuration:

Exhibit EOC5-1 illustrates the Resource Management Test configuration with ETS and SSIM. Since the functions of Resource Management are internal to the EOC the AM-1 spacecraft is not required for this test. *Exhibit to be updated to reflect use of ETS, and to show Release A and Release B configurations.*

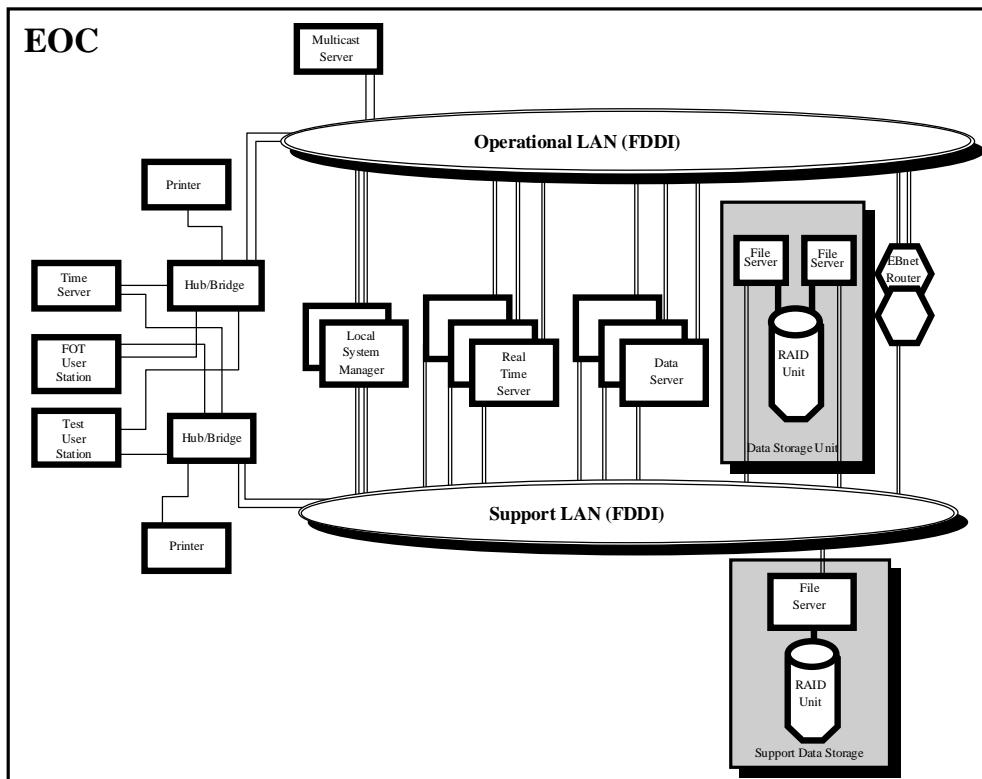


EXHIBIT EOC5-1: Resource Management Confidence Test Configuration

Participants and Support Requirements:

Participants:

- FOT (with “root” system privileges)
- ETS MPS Operator
- I&T Test Conductor

Communications:

1. Voice -
CCL between EOC and ETS MPS
2. Data -
EBnet circuit from EOC to ETS MPS

Equipment and Software:

Hardware

- Multicast Server (3)
- Local System Manager (2)
- Real-Time Server (2)
- Data Server (2)
- File Server (3)
- RAID Unit (1)
- Laser Printer (4)
- Line Printer (4)
- Color Printer (4)
- FDDI Hub/Bridge (2)
- Time Server (2)
- FOT User Workstation (36)
- EOC Router (2)
- EBnet Router (2)
- Operational LAN (FDDI)
- Support LAN (FDDI)

Software

- Resource Management Subsystem
- Data Management Subsystem
- User Interface Subsystem
- Telemetry Subsystem
- Command Subsystem
- Real-time Contact Subsystem

Test Tools:

ETS - MPS

Test Data:

Description/Characteristics	Source	File/Script Name & Location
Housekeeping telemetry.	ETS MPS	

Test Case Descriptions:

EOC5.1 - Display Control

This test verifies the ability to create new and modify existing instrument, spacecraft, and ground pages/rooms. Displays will be shifted between various pages, rooms, and views. Alphanumeric displays, graphs, tables, and schematics will be utilized to present the following conditions:

- Hardware Status
- Software Configuration
 - Monitor specified software component for changes in state.
 - Register permanent and transient software processes upon creation for monitoring
 - Unregister transient software processes upon termination
 - Types of management events reportable to MSS include: Faults, Performance, Security, and Accountability.
- System Performance
- Interface Activity

Requirements to be Verified:

EOC-9010 EOC-9020

EOC5.2 - User Function Control

This test verifies the capability to assign key functions such as command activity controller (CAC) and ground controller to various workstations. An attempt will be made to bestow authority to a user outside the EOC.

A second console will attempt to take command activity controller authority away from an existing CAC. The existing CAC will logout and the second console will be allowed CAC authority.

Requirements to be Verified:

EOC-9010 EOC-9020

EOC5.3 - Logical String Control

This test verifies the capability to Configure and de-configure logical processing strings. A minimum of two FOS users will be on the system at the same time. Both users will be employing logical string control to demonstrate the interaction controls.

- Utilize various data sources - e.g. real-time, simulation, historical replay
- Employ various modes - e.g. operational, test, training.
- Perform in both active and backup states.
- An EOC user will request a dedicated logical string. Verification will be made that no other user can access that activity.
- An EOC user will request a shared logical string. Verification will be made that other users can access that activity.
- The ground controller (GC) will create and connect to a shared logical string. A second EOC user will request a mirrored connection to a logical string. Changes made to the string by the GC will be reflected on the second user's display.

- A second EOC user will request a tailored connection to a logical string. Changes made to the string by the GC will not be reflected on the second user's display. The second EOC user will then change the configuration without requesting Ground Control Privilege and the change will affect only the second user's display.

Requirements to be Verified:

EOC-8110 EOC-8130 EOC-8140 EOC-9010 EOC-9020

EOC5.4 - Failover

This test verifies proper operations during system failover to redundant or standby elements. During normal operations the following EOC components will be caused to fail and the system monitored to assure uninterrupted, smooth transition to the backup component. For Release A demonstrate that ECS has no single point of failure for functions associated with real-time operations of the spacecraft and instruments (EOSD-3710#A).

- Real-Time server failover
- Data server failover
- RAID failover
- Time server failover
- EBnet router failover
- FDDI concentrator failover
- FDDI-Ethernet hub failover
- FDDI router failover

Requirements to be Verified:

EOC-3710 EOC-9010 EOC-9020

NOTE: EOC5.5 - FOS Security has been moved into test EGS7 which contains the security functionality testing for all EGS.

Test Procedures:

Test Set-up:

Step	Station	Action	Expected Results	Comments
1.	EOC	Ensure Sybase servers are started on Data and Real-Time servers.	Processes active.	M&O setup. OTMp4-3
2.	EOC	Login to the FOS Data Server and initialize necessary subsystems		OTMp4-3
3.	EOC	Start the A2_DataServerStartup shell script from directory: /fos/test/am1/scripts/setup. Login to the FOS Real-Time Server and initialize necessary subsystems		OTMp4-3
4.	EOC	Start the A2_RealTimeServerStartup shell script from directory: /fos/test/am1/scripts/setup. Login to the FOS user workstation and initialize necessary subsystems		OTMp4-3
5.	USER-1	Start the A2_UserStationStartup shell script from directory: /fos/test/am1/scripts/setup. At the user workstation create the following logical string (#=100); STRING CREATE REALTIME SPACECRAFTID=AM1 DATABASEID=TBD MODE=OPERATIONAL SERVER=TBD	String created.	
6.	USER-1	Connect to string 100: STRING CONNECT STRING=100 TYPE=MIRROR	Mirrored connection established.	
7.	USER-1	Record the system configuration on the execution cover sheet	system configuration recorded.	

Test Execution:
EOC5.1 Display Control

Summary of EOC5.1:

DISPLAY BUILDER

Create new Alphanumeric page, save page

Modify field properties, save page

Create new Table page, save page

modify Label properties

modify Separator properties

modify Table properties, save page

Create new 2D & 3D Graph page, save page

modify Graph properties, save page

Transmit Housekeeping data from ETS, verify all 6 page displays

EVENT BUILDER - all capabilities release B ???

ROOM BUILDER

Create new Permanent room

include existing Events window

include existing Graph window

include existing Table window

include existing Status window

include existing Schematic window

Transmit Housekeeping data from ETS, verify window displays

Create temporary room

logout

login - verify temporary room settings no longer in effect.

Step	Station	Action	Expected Results	Comments
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Step	Station	Action	Expected Results	Comments
1.	~	From the Control Window - MAIN Room, create new dynamic pages via the Display Builder (Alphanumeric display, Table, 2D Graph, 3D Graph).		
2.	USER-1	Start Display Builder via menu selections.	Display Builder displayed	OTM section 7.9 need to identify types of strings based on available data.
3.	USER-1	Associate logical string(s) via the Data Source Management Dialog window for an alphanumeric list page.	Logical strings associated with new page.	
4.	USER-1	Add items to the dynamic page that are supported by existing data.	Items displayed in dynamic page.	ref:609 pg 7-11
5.	~	Associate parameters with display items via the Data Source Dialog window.		
6.	USER-1	For each display item select Add New Parameter and associate a parameter with the display items.	Parameters selected from the Available Parameters list are moved to the Selected Parameters list.	
7.	USER-1	Save the Dynamic Page as eoc5v1alpha1 .	Page saved.	
8.	~	Exercise the ability to modify the properties of fields.		ref:609 pg 7-10
9.	USER-1	Modify the x, y, width, and height of a field.	Size modified as desired.	
10.	USER-1	Modify the field components (label, units, flags).		
11.	USER-1	Modify the width of the value in characters.		
12.	USER-1	Modify the conversion of the value (Converted, Decoded, Raw).	The 3 types of values will display accurately when data received.	
13.	USER-1	Modify the display type of the value (Formatted, Hex, Octal, Scientific Notation).	The value will display correctly.	
14.	USER-1	Modify the alignment of the value (Left, Centered, Right).	Value aligned appropriately.	
15.	USER-1	Modify the content of the label (Mnemonic, Descriptor).	Label displays as appropriate.	

Step	Station	Action	Expected Results	Comments
16.	USER-1	Modify the width of the label in characters.		
17.	USER-1	Modify the alignment of the label (Left, Centered, Right).	Label aligned appropriately.	
18.	USER-1	Modify the alignment of the units (Left, Centered, Right).	Units aligned appropriately.	
19.	USER-1	Modify the alignment of the flags (Left, Centered, Right).	Flags aligned appropriately.	
20.	USER-1	Save the Dynamic Page of alphanumeric displays as eoc5v1alpha2 .	Page saved as eoc5v1page.	
21.	~	Create a new page with a table. Demonstrate the ability to modify the contents.		
22.	USER-1	Associate logical string(s) via the Data Source Management Dialog window for a new Table page.	Logical strings associated with new page. need to identify types of strings based on available data.	
23.	USER-1	Add tables to the dynamic page that are supported by existing data.	Tables displayed in dynamic page.	
24.	~	Associate parameters with display items via the Data Source Dialog window.		ref:609pg7-11
25.	USER-1	For each display item select Add New Parameter and associate a parameter with the display items.	Parameters selected from the Available Parameters list are moved to the Selected Parameters list.	
26.	USER-1	Save the Dynamic Page as eoc5v1table1 .	Page saved.	
27.	~	Exercise the ability to modify the properties of labels.		ref:609 pg 7-10
28.	USER-1	Modify the x, y, width, and height of a label.		
29.	USER-1	Modify the text displayed by the label.	Text displayed as modified.	
30.	USER-1	Modify the alignment of the label.	Label aligned appropriately.	
31.	USER-1	Modify the color of the label.	Label displayed in color selected.	
32.	~	Exercise the ability to modify the properties of Separators.		ref:609 pg 7-10

Step	Station	Action	Expected Results	Comments
33.	USER-1	Modify the x, y, width, and height of a separator.	Separator displays as modified.	
34.	USER-1	Modify the orientation of a separator (horizontal, vertical).	Separator displayed in proper orientation.	
35.	~	Exercise the ability to modify the properties of Tables.		ref:609 pg 7-10 More Table edit capabilities to be implemented in Release B.
36.	USER-1	Modify the x, y, width, and height of a table.	Table displays as modified.	
37.	USER-1	Modify the associated parameters of a table.	Table displays as modified.	
38.	USER-1	Save the Dynamic Page of table displays as eoc5v1table2 .	Page saved.	
39.	~	Create a new page with 2D and 3D Graphs. Demonstrate the ability to modify the contents.		
40.	USER-1	Associate logical string(s) via the Data Source Management Dialog window for a new 2D and 3D graph page.	Logical strings associated with new page.	need to identify types of strings based on available data.
41.	USER-1	Add 2D and 3D graphs to the dynamic page that are supported by existing data.	2D and 3D graphs displayed in dynamic page.	
42.	~	Associate parameters with display items via the Data Source Dialog window.		ref:609pg7-11
43.	USER-1	For each display item select Add New Parameter and associate a parameter with the display items.	Parameters selected from the Available Parameters list are moved to the Selected Parameters list.	
44.	USER-1	Save the Dynamic Page as eoc5v1graph1 .	Page saved.	

Step	Station	Action	Expected Results	Comments
45.	~	Exercise the ability to modify the properties of Graphs.		ref:609pg 7-10 More Graph edit capabilities to be implemented in Release B.
46.	USER-1	Modify the x, y, width, and height of a graph.	Graph displays as modified.	
47.	USER-1	Modify the associated parameters of a graph.	Graph displays as modified.	
48.	USER-1	Save the Dynamic Page of graph displays as eoc5v1graph2 .	Page saved as eoc5v1page.	
49.	USER-1	Exit Display Builder .	Current room displayed.	
50.	USER-1	Display the 6 pages just created.	Pages displayed.	
51.	ETS	Initiate sending Housekeeping data to EOC.	Data received by EOC.	
52.	USER-1	Verify data displayed and updated properly.	Original and modified pages display appropriately.	
53.	ETS	Terminate Housekeeping data.	Data stopped.	
54.				
55.	~	Create a customized Event Display .	TBS	Release B.?
56.				
57.	~	Create a new permanent room called ' EOC5V1 '.		OTM section 7.10
58.	USER-1	Add an Events window to the current room.	An Events window is displayed.	ref:604pr3.4.8.2
59.	USER-1	Add to the current room a Graph window that monitors a spacecraft function.	A Graph window is displayed based on spacecraft data.	
60.	USER-1	Add to the current room a Table window that displays instrument information.	A Table window is displayed based on instrument data.	
61.	USER-1	Add to the current room a Status window that displays ground system status.	A Status window is displayed based on ground data.	
62.	USER-1	Add to the current room a Schematic window.	A Schematic window is displayed.	

Step	Station	Action	Expected Results	Comments
63.	USER-1	Enter Room Builder and name the room as “EOC5V1” and save as a permanent, default room.	Room saved.	
64.	USER-1	Rearrange the windows.	Windows relocated.	
65.	USER-1	Select Tile .	New window arrangement saved as the Tile settings.	
66.	USER-1	Exit Room Builder .	EOC5V1 windows are replaced by the new room's windows.	
67.	USER-1	Select and display a different room.	The previous room's windows are replaced by EOC5V1 windows in the default position.	
68.	USER-1	Select and display the EOC5V1 room.	The EOC5V1 windows are arranged as defined by the TILE setting.	
69.	USER-1	Select Tile .	Data received by EOC.	
70.	ETS	Initiate sending Housekeeping data to EOC.	The EOC5V1 windows display and are updated correctly.	
71.	USER-1	Verify data displayed and updated properly.	Data stopped.	
72.	ETS	Terminate Housekeeping data.	Temporarily modify the EOC5V1 room:	
73.	~		Close the instrument table window.	
74.	USER-1		Add a Graph window that monitors an instrument function.	A second Graph window is displayed based on instrument data..
75.	USER-1		Enter Room Builder and save the new EOC5V1 window arrangement as a temporary, default room.	Room saved.
76.	USER-1		Select and display a different room.	EOC5V1 windows are replaced by the new room's windows.
77.	USER-1		Select and display the EOC5V1 room.	The previous room's windows are replaced by modified EOC5V1 windows.
78.	USER-1		Terminate the session, then initiate a new session.	
79.	USER-1			

Step	Station	Action	Expected Results	Comments
80.	USER-1	Select EOC5V1 room.	EOC5V1 windows are displayed as defined in the permanent, default setting (not the temporary settings).	
81.	USER-1	Redisplay main room..	Main room displayed.	Test cleanup.
82.				

EOC5.2 User Function Control

Summary of EOC5.2:

Request Operations Controller (OC) privilege
Request Command Activity Controller (CAC) privilege

Request Ground Controller (GC) privilege.

Request Spacecraft Evaluator (SE) privilege.

Request Instrument Evaluator (IE) privilege.

Request Command Activity Controller (CAC) privilege from a second workstation - request denied

CAC logout

Request Command Activity Controller (CAC) privilege from a second workstation - request bestowed

Request Command Activity Controller (CAC) privilege from outside EOC - Release B

Step	Station	Action	Expected Results	Comments
1.	OC	Connect to a realtime mirrored string. STRING CONNECT STRING=100 CONFIG=MIRROR	Mirrored connection established	
2.	OC	Request Operations Controller (OC) privilege. TAKE “OC” STRING = 100	OC privilege bestowed .	
3.	OC	Bring up event page	Monitor the events display.	
4.	CAC	Connect to a realtime mirrored string. STRING CONNECT STRING=100 CONFIG=MIRRORED	Mirrored connection established	
5.	CAC	Request Command Activity Controller (CAC) privilege. TAKE COMMAND STRING = 100	Request Command Activity Controller (CAC) privilege.	
6.	CAC	Bring up event page	Monitor the events display.	
7.	GC	Connect to a realtime mirrored string. STRING CONNECT STRING=100 CONFIG=MIRROR	Mirrored connection established	

Step	Station	Action	Expected Results	Comments
8.	GC	Request Ground Controller (GC) privilege. TAKE GROUNDCONTROL STRING = 100		
9.	GC	Open a ‘position appropriate’ room.	Windows displayed for the room selected.	
10.	SE	Connect to a realtime mirrored string. STRING CONNECT STRING=100 CONFIG=MIRROR	Mirrored connection established	
11.	SE	Request Spacecraft Evaluator (SE) privilege. TAKE “SE” STRING = 100		
12.	SE	Open a ‘position appropriate’ room.	Windows displayed for the room selected.	
13.	IE	Connect to a realtime mirrored string. STRING CONNECT STRING=100 CONFIG=MIRROR	Mirrored connection established	
14.	IE	Request Instrument Evaluator (IE) privilege. TAKE “IE” STRING = 100		
15.	IE	Open a ‘position appropriate’ room.	Windows displayed for the room selected.	
16.	SE	Request CAC privilege while a CAC already assigned.. TAKE COMMAND STRING = 100	Request denied.	
17.	CAC	Logout from CAC privileges.		
18.	CAC-2	At the console previously denied CAC access, request CAC privilege while no CAC is assigned. TAKE COMMAND STRING = 100		
19.	CAC-2	Bring up event page	Monitor the events display.	
20.	IST	Connect to a realtime mirrored string. STRING CONNECT STRING=100 CONFIG=MIRROR	Mirrored connection established	Release B.
21.	IST	Request Command Activity Controller (CAC) privilege from outside the EOC. TAKE COMMAND STRING = 100	Request denied.	Release B.

Step	Station	Action	Expected Results	Comments
22.	OC	Terminate the software processes, then log off of the FOS user workstation: Execute the MyKill script (Rls A only). Logoff User workstation.		
23.	GC	Terminate the software processes, then log off of the FOS user workstation: Execute the MyKill script (Rls A only). Logoff User workstation.		
24.	SE	Terminate the software processes, then log off of the FOS user workstation: Execute the MyKill script (Rls A only). Logoff User workstation.		
25.	IE	Terminate the software processes, then log off of the FOS user workstation: Execute the MyKill script (Rls A only). Logoff User workstation.		
26.				

EOC5.3 Logical String Control

Summary of EOC5.3:

Attempt to create an existing string: string create realtime
 string connect Mirrorby User-1 - view same page, data updated the same
 GC make configuration changes - reflected to User-1
 Create and connect to a dedicated logical string
 string create simulation - release B
 string create "playback" - release B
 string connect Tailored - release B
 string delete - Release B
 default logical string creation - release B
 String failover - release B

Step	Station	Action	Expected Results	Comments
1.	USER-1	Connect to a realtime mirrored string. STRING CONNECT STRING=100 CONFIG=MIRROR	Mirrored connection established	
2.	GC	Request Ground Controller (GC) privilege. TAKE GROUNDCONTROL STRING = 100		
3.	GC	Attempt to create an existing string: STRING CREATE REALTIME SPACECRAFTID=AM1 DATABASEID=TBD MODE=OPERATIONAL SERVER=TBD	Error stating string already exists.	
4.	GC	Display a Page of housekeeping data: PAGE TBD	Page is displayed.	
5.	USER-1	Connect to an existing string. STRING CONNECT STRING=100 TYPE=MIRROR	Connection accepted.	

Step	Station	Action	Expected Results	Comments
6.	USER-1	Display the same Page as GC: PAGE TBD	Page is displayed.	
7.	ETS	Initiate transfer of Housekeeping data from EDOS with data that changes. File TBD .	Housekeeping data being transferred.	
8.	USER-1 /GC	Verify Housekeeping values update at both user stations.	Data display is identical and updated at same rate.	
9.	GC	Make configuration changes to the logical string.		OTM pr 9.2.4
10.	USER-1	Verify configuration changes made by GC are reflected on workstation.	Verify user-1 changes reflected on user-2 display because of mirrored connection.	
11.	GC	Create a string for test mode: STRING CREATE REALTIME SPACECRAFTID=AMI DATABASEID=TBD MODE=TEST SERVER=TBD (RTS)	String created.	
12.	GC	Connect to the Test mode string. STRING CONNECT STRING=TBD TYPE=MIRROR	Connection accepted.	
13.	GC	Verify configuration on TBD Page.	Configuration confirms Test mode.	
14.	GC	Create a string for training mode: STRING CREATE REALTIME SPACECRAFTID=AMI DATABASEID=TBD MODE=TRAINING SERVER=TBD (RTS)	String created.	
15.	GC	Connect to the Training mode string. STRING CONNECT STRING=100 TYPE=MIRROR	Connection accepted.	
16.	GC	Verify configuration on TBD Page.	Configuration confirms Training mode.	

Step	Station	Action	Expected Results	Comments
17.	USER-1	Create a dedicated logical string. STRING CREATE REALTIME SPACECRAFTID=AM1 DATABASEID=TBD MODE=OPERATIONAL SERVER=TBD (workstation?) TYPE=TBD	Dedicated logical string created (# 001).	OTMpg9-1,2
18.	USER-1	Connect to the dedicated logical string. STRING CONNECT STRING=001 TYPE=TBD	USER-1 connected to string 001	TYPE=?
19.	USER-2	Attempt to connect to same STRING as USER-1: STRING CONNECT STRING=001 TYPE=MIRROR	Alert that no such string exists, or connects to STRING 001 on local workstation.	
20.	GC	Create a reconfiguration request that violates operational constraints.	Operator receives error alert.	TBD
21.	GC	Override the operational constraint error.	Reconfiguration takes effect.	
22.				
23.	GC	STRING CREATE SIMULATION		Release B
24.	GC	STRING CREATE "PLAYBACK"		Release B
25.	GC	STRING CONNECT TAILORED		Release B
26.	GC	STRING DELETE		Release B
27.	GC	Default logical string creation		Release B
28.	GC	STRING FAILOVER		Release B
29.				

EOC5.4 Failover

Summary of EOC5.4:

ALL failures subject to EOC guidelines & approval!
cause the Operational LAN to fail
cause the Time Server to fail
cause the EBnet Router to fail
cause the FDDI Concentrator to fail
cause the FDDI Ethernet Hub to fail
cause the FDDI Router to fail

Step	Station	Action	Expected Results	Comments
1.	Test Reviewer	NOTE: Actions to cause the failures are not identified. Details to be worked out with EOC personnel.	Details worked out during dry runs.	
2.	GC	Connect to a realtime mirrored string. STRING CONNECT STRING=100 CONFIG=MIRROR	Mirrored connection established	
3.	GC	Request Ground Controller (GC) privilege. TAKE GROUNDCONTROL STRING = 100		305-43pr3.4
4.	GC	Open Event window to monitor hardware and software status..	Selected windows displayed.	
5.	~	Under normal operating conditions, cause the Real-time server to fail and switch over to the standby Real-time server.		Release B
6.	~	Under normal operating conditions, cause the Data server to fail and switch over to the standby Data server.		Release B

Step	Station	Action	Expected Results	Comments
7.	~	Under normal operating conditions, cause the RAID to fail and switchover to the standby RAID unit.		Release B
8.	~	Under normal operating conditions, cause the Operational LAN to fail and switchover to the Support LAN.	No single point of failure.	LAN has no single point of failure. c-iss-04040
9.	EOC	Cause Operational LAN failure.	Operations failover to the Support LAN.	
10.	GC	Notification of status to operator.		
11.	GC	Ground Controller issue directive to initiate failover process.	RMS software ensures no more than one logical string is supporting the same activity at one time.	305-043pr3.4
12.	EOC	EOC processes dependent on Operational LAN recover without affecting functions associated with Real-time operations of the spacecraft or instruments..		
13.	EOC	Restore Operational LAN to operation.		
14.	GC	Notification of status to operator.		
15.	EOC	Event recorded in log file.		
16.	EOC	EOC processes dependent on Operational LAN transition without affecting functions associated with Real-time operations of the spacecraft or instruments..		
17.	~	Under normal operating conditions, cause the Time Server to fail and switchover to the standby Time server.		
18.	EOC	Cause Time Server failure.		
19.	GC	Notification of status to operator.		
20.	GC	Ground Controller issue directive to initiate failover process.	RMS software ensures no more than one logical string is supporting the sasme activity at one time.	Automated switchover, user directive requir'd 305-043pr3.4

Step	Station	Action	Expected Results	Comments
21.	EOC	EOC processes dependent on Time Server recover without affecting functions associated with Real-time operations of the spacecraft or instruments..		
22.	EOC	Restore primary Time Server to operation.		
23.	GC	Notification of status to operator.		
24.	EOC	Events recorded in log file.		
25.	EOC	EOC processes dependent on Time Server transition without affecting functions associated with Real-time operations of the spacecraft or instruments..		
26.	~	Under normal operating conditions, cause the EBnet Router to fail and switchover to the standby EBnet Router.	<i>Cut, Paste & Modify failure & recovery procedures (see steps 8 - 15)</i>	
27.			<i>Cut, Paste & Modify failure & recovery procedures (see steps 8 - 15)</i>	
28.	~	Under normal operating conditions, cause the FDDI Concentrator to fail and switchover to the standby FDDI concentrator.	<i>Cut, Paste & Modify failure & recovery procedures (see steps 8 - 15)</i>	
29.			<i>Cut, Paste & Modify failure & recovery procedures (see steps 8 - 15)</i>	
30.	~	Under normal operating conditions, cause the FDDI Ethernet Hub to fail and switchover to the standby FDDI Ethernet hub.	<i>Cut, Paste & Modify failure & recovery procedures (see steps 8 - 15)</i>	
31.			<i>Cut, Paste & Modify failure & recovery procedures (see steps 8 - 15)</i>	
32.	~	Under normal operating conditions, cause the FDDI Router to fail and switchover to the standby FDDI router.	<i>Cut, Paste & Modify failure & recovery procedures (see steps 8 - 15)</i>	

Step	Station	Action	Expected Results	Comments
33.			<i>Cut, Paste & Modify failure & recovery procedures (see steps 8 - 15)</i>	
34.				

Test Termination:

Step	Station	Action	Expected Results	Comments
1.	USER-1	Collect all necessary screen snaps, dumps, etc. needed for post-test analysis and verification		
2.	~	Reconfigure the system to pre-test configuration		
3.	EOC	Terminate the software processes, then log off all FOS user workstations: Execute the MyKill script (RIs A only). Logoff User workstation.	609p4-3	
4.	EOC	Terminate the software processes, then log off of the FOS Real-Time Server. Execute the MyKill script (RIs A only). Logoff Real_Time Server.	609p4-3	
5.	EOC	Terminate the software processes, then log off of the FOS Data Server. Execute the MyKill script (RIs A only). Logoff Data Server.	609p4-3	

Appendix: Test Package Requirements Summary

RELEASE A

Requirement	Description	Test Cases
EOC-8110#A	The EOC shall support ongoing operations.	EOC5.3
EOC-8130#A	The EOC shall allow operator override for reconfiguration requests that violate operational constraints. <i>Clarification: L4 The status of the software tasks monitored could be active, inactive, or suspended. The monitor function will be provided by MSS tools that will be employed by the FOS software. Statuses will be reported to the DMS subsystem in the form of management events.</i>	EOC5.3
EOC-8140#A	The EOC shall manage initialization and shutdown of EOC functions.	EOC5.3
EOC-9010#A	The EOC shall provide the capability for the operator to control the EOC functions and components, utilizing a combination of input devices.	EOC5.1 EOC5.2 EOC5.3 EOC5.4
EOC-9020#A	The EOC shall provide the capability for the operator to send to displays, printers, and files spacecraft, instrument, and ground system information used or generated by each EOC function.	EOC5.1 EOC5.2 EOC5.3 EOC5.4
EOC-9025#A	The EOC shall provide the capability to notify the operator of events and alarms.	EOC5.1 EOC5.2 EOC5.3 EOC5.4
EOSD3710#A <i>Partial</i>	The ECS shall have no single point of failure for functions associated with real-time operations of the spacecraft and instruments.	EOC5.4

RELEASE B

Requirement	Description	Test Cases
EOC-8110#B	The EOC shall support reconfiguration to work around faults and anomalies without interrupting other ongoing operations. <i>Clarification: L4 The status of the software tasks monitored could be active, inactive, or suspended. The monitor function will be provided by MSS tools that will be employed by the FOS software. Statuses will be reported to the DMS subsystem in the form of management events.</i>	EOC5.4
EOC-8130#B	The EOC shall allow operator override for reconfiguration requests that violate operational constraints.	EOC5.3
EOC-8140#B	The EOC shall manage initialization and shutdown of EOC functions.	EOC5.3
EOC-8160#B	The EOC shall alert the operator when its status changes or when data errors exceed operator-specified levels.	EOC5.1 EOC5.4
EOC-8220#B	The EOC shall manage its faults including at a minimum the following: a. Fault identification and reporting b. Identification of recommended solutions c. Log of fault activities through resolution	EOC5.4
EOC-8240#B	The EOC shall be capable of initiating diagnostics to aid in isolating internal faults, using safeguards to prevent their operations from affecting other operations.	EOC5.4
EOC-9010#B	The EOC shall provide the capability for the operator to control the EOC functions and components, utilizing a combination of input devices.	EOC5.1 EOC5.2 EOC5.3 EOC5.4
EOC-9020#B	The EOC shall provide the capability for the operator to send to displays, printers, and files spacecraft, instrument, and ground system information used or generated by each EOC function.	EOC5.1 EOC5.2 EOC5.3 EOC5.4
EOC-9025#B	The EOC shall provide the capability to notify the operator of events and alarms.	EOC5.1 EOC5.2 EOC5.3 EOC5.4
EOSD2990#B <i>Partial</i>	The ECS elements shall support the recovery from a system failure due to a loss in the integrity of the ECS data or a catastrophic violation of the security system.	EOC5.4
EOSD3000#B <i>Partial</i>	The ECS shall provide for security safeguards to cover unscheduled system shutdown (aborts) and subsequent restarts, as well as for scheduled system shutdown and operational startup.	EOC5.4
EOSD3710#B <i>Partial</i>	The ECS shall have no single point of failure for functions associated with real-time operations of the spacecraft and instruments.	EOC5.4